



Swiss Science Concentrates

A CHIMIA Column

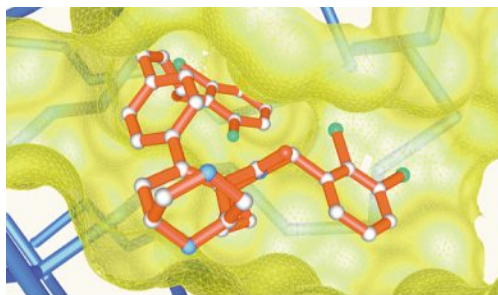
Short Abstracts of Interesting Recent Publications of Swiss Origin

Design and Preparation of Potent, Nonpeptidic, Bioavailable Renin Inhibitors

O. Bezençon*, D. Bur, T. Weller, S. Richard-Bildstein, L. Remeň, T. Sifferlen, O. Corminboeuf, C. Grisostomi, C. Boss, L. Prade, S. Delahaye, A. Treiber, P. Strickner, C. Binkert, P. Hess, B. Steiner, W. Fischli, *J. Med. Chem.* **2009**, *52*, 3689

Actelion Pharmaceuticals Ltd. Allschwil

In this article, the authors describe the rational design and synthesis of a new series of 3,9-diazabicyclo[3.3.1]nonene derivatives, starting from known piperidine inhibitors. Optimization of the positions 3, 6, and 7 of the diazabicyclonene template led to potent renin inhibitors including compound (+)-**26 g** (see article) that inhibits renin with an IC₅₀ of 0.20 nM in buffer and 19 nM in plasma. It is well absorbed in rats and efficacious at 10 mg/kg in a double transgenic rat model.



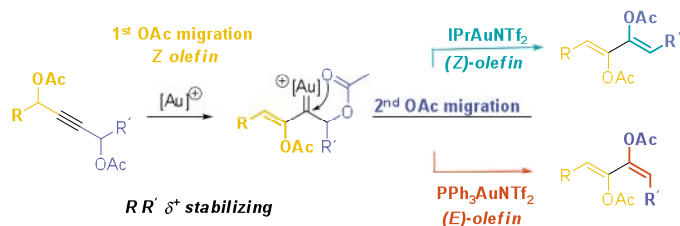
Gold-Catalyzed Stereocontrolled Synthesis of 2,3-Bis(acetoxy)-1,3-dienes

X. Huang, T. de Haro, C. Nevado*, *Chem. Eur. J.* **2009**, *15*, 5904

University of Zurich

In this article, the authors describe a rapid-access method to synthetically useful 2,3-bisacetoxy-1,3-dienes using a novel Au(I)-catalyzed tandem 1,2-/1,2-bisacetoxy rearrangement of 1,4-bis(propargyl) acetates. Interestingly, (1Z, 3Z) or (1Z,3E) and 1E,3Z)-1,3-dienes can be selectively synthesized depending on the catalyst of choice. Indeed, the stereochemistry of the second acetoxy migration is controlled by the nature of the ligand attached to the gold catalyst: N-heterocyclic carbenes (NHC) favour *cis*-alkenes whereas phosphine ligands give access to *trans*-alkenes.

Au(I)-CATALYZED 1,2-/1,2-BISACETOXY MIGRATION

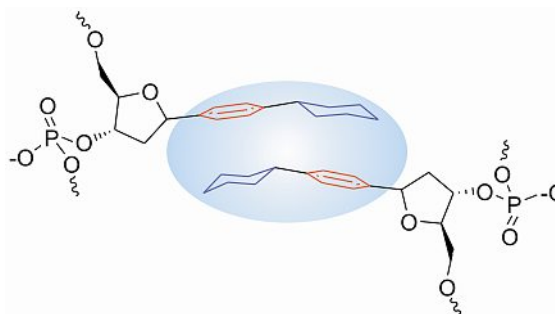


Stable Cyclohexyl-Phenyl Recognition in the Center of a DNA Duplex

M. Kaufmann, M. Gisler, C. J. Leumann*, *Angew. Chem., Int. Ed.* **2009**, *48*, 3810

University of Bern

In this paper, the authors show that even saturated carbocycles, like phenylcyclohexyl, are compatible with Watson-Crick pairing as they are incorporated into a center of DNA duplex. Based on the CH/π interactions (cyclohexyl/phenyl), the resulting duplex has a good stability. This system makes the DNA duplex an ideal scaffold for studying hydrophobic interactions and allows incorporation of additional molecular entities into the double helix.



Synthesis of Planar Five-Connected Nodal Ligands

O. Oms, T. Jarrosson, L. H. Tong, A. Vaccaro, G. Bernardinelli, A. F. Williams*, *Chem. Eur. J.* **2009**, *15*, 5012

University of Geneva

In this article a short and efficient synthetic route to penta(4-pyridyl)cyclopentadienyl ligands is reported using a Pd-catalyzed pentaarylation step. This route is modular and allows the isolation of Cp ligands substituted with 4-benzaldehydes or 4-phenylthiols. These ligands are formally five connected nodes that should coordinate metals to form closed spherical complexes. Experiments with Cu(I) and Ag(I) show the predicted 1:2.5 stoichiometry. NMR diffusion and light scattering analyses support the formation of a large cluster (15 Å radius), as expected from a computer-generated model.

